

REMARKS

This application pertains to a novel heat sealable layer.

Claims 2-10, 12-24 and 26-31 are pending.

The claims have been amended to substrate the expression --a heat-sealable composite film -- for "multi-ply laminate," to emphasize the fact that the claimed film is heat sealable.

Claims 31, 2, 3, 6-10, 13, 15, 17, 18, 19, 20 and 23 stand rejected under 35 U.S.C. 103(a) as obvious over Dobreski (U.S. 5,334,428).

Applicants have previously pointed out that Dobreski's sequence of layers in his cling wrap is the exact opposite of that recited in Applicants' claims. That is, Applicants intermediate layers have higher melt flow rates (MFR or Melt Index) than does Applicants' outer layer. This inventive sequence of layers enables Applicants film to provide improved heat sealing characteristics, such as improved seal strength immediately after heat sealing as well as a hermetically sealed seam without formation of channels.

Dobreski, by contrast, has his higher melt Index layers on the outside, with his intermediate layers having lower melt flow rates than the outside layers. This is different than and non suggestive of Applicants' film.

In the face of these facts, the Examiner has now made an imaginative attempt to create his own prior art. The Examiner has now essentially proposed that Dobreski's film be considered in its state of use, as an overlapped configuration. Thus, according to the Examiner, if Dobreski's film is overlapped over itself, then his outer layer would be in contact with itself in the overwrapping and as such, would now, in the Examiner's view, be an inner layer, not an outer layer.

A rose by any other name is still a rose, however. By overlapping or overwrapping Dobreski's film about itself the result would be just that, a wrap which is wrapped about itself. The wrap or film would not lose its identity; it would still be the same laminate it was before it was wrapped about itself; and wrapping or overwrapping will not form a new film or laminate. Dobreski's film is a "cling wrap", and when one ply of it "clings" to another it does not create a new film...it is just two plies of a film clung together. In such a configuration, for example, such film would have no further use...it could not be used e.g. as a heat sealable film.

The overwrapped film is, essentially, two films placed one on top of another and the two do not become one.

Moreover, the "overwrapped" configuration proposed by the Examiner would, at best, have the same MFR in the inner layer as that of the outer layer. Applicant's inner ply (i) has a **higher** MFR than outer ply (b).

The rejection of claims 31, 2, 3, 6-10, 13, 15, 17, 18, 19, 20 and 23 under 35 U.S.C.

103(a) as obvious over Dobreski (U.S. 5,334,428) should be withdrawn.

Claims 26-29 stand rejected under 35 U.S.C. 103(a) as obvious over Dobreski in view of Simmons (US 5,273,809).

The Examiner cites Simmons for a teaching of a composition of a "non cling" layer.

However, nothing in the Simmons reference would overcome the deficiencies of the Dobreski reference, as discussed above. Specifically, nothing in Simmons would change the fact that Dobreski's outer layers have higher MFR's than his intermediate layer. This is the opposite of Applicants' product, wherein the inner layer has a higher MFR than the outer layer.

The rejection of Claims 26-29 under 35 U.S.C. 103(a) as obvious over Dobreski in view of Simmons should therefore be withdrawn.

Claim 16 stands rejected under 35 U.S.C. 103(a) as obvious over Dobreski.

The Examiner says it would be obvious to use a metallocene catalyst because they allow for "better composition distribution" etc. The Examiner provides no evidence of obviousness, however, and the Examiner's own statement cannot take the place of evidence (in Re Lee, 61 USPQ 1430 (CAFC 2002)).

In addition, the deficiencies of this reference have already been pointed out with

respect to the rejection of Claims 31, 2, 3, 6-10, 13, 15, 17, 18, 19, 20 and 23 over the same reference, and Applicants' remarks regarding that rejection are incorporated herein by reference.

The rejection of Claim 16 under 35 U.S.C. 103(a) as obvious over Dobreski should accordingly be withdrawn.

Claims 31, 2-10, 12, 13, 14, 17, 18, 19, 23, 26, 27 and 28 stand rejected under 35 U.S.C. 103(a) as obvious over Paleari et al. (U.S. 6,110,570) in view of Hodgson, Jr. (U.S. 5,206,075).

Paleari teaches multi layer films of the structure (d) // (c) // (b) // (a) of which only the outer ply=surface ply (a) is heat sealable and composed of a material with a melt index of 3 to 6g/10 min (examples 1-21) and the inner plies (b) - (d) composed of a material with a fractional melt index that is lower than 1g/10 min according to the definition in column 3, lines 14-18.

Therefore, Paleari's teaching and all of its numerous examples teach only one heat sealable ply, namely the outer ply composed of a material with a MFR greater than the MFR value of each of the inner plies. Those skilled in the art would have no motivation or suggestion to substitute the outer heat sealable ply with a material having a MFR value far below 1g/10 min.

A preferred embodiment of Paleari relates - among others - to a **kind** or **class** of polymers used as material for the heat sealable outer layer which is also mentioned in the

patent specification of Hodgson as heat sealable material. But his material - also being of the kind mentioned in the Paleari patent - has a MFR of 0.5 to 7.5g/10 min. There is no hint disclosed why one skilled in the art should use this material according to the teaching of Paleari in a manner to obtain an arrangement of a heat sealable layer consisting of several plies according to the present invention.

But even if one assumes a combination of Paleari and Hodgson, it is obvious that only outer heat sealable plies of Hodgson with melt index in a range 0.5 to 0.9 g/10 min (about 5% of the original range) even stand a chance of having a MFR that would be lower than the melt indexes of both inner plies (b) - (d) of Paleari (which must be lower than 1).

Consequently, it requires hindsight reconstruction of Applicant's teaching to purposefully combine both inner plies, (b) and (d), of Paleari, which are both limited to extremely low MFR values, with an outer ply according to Hodgson, the latter being selected from one extremely small subpopulation of outer plies in a multitude of outer plies with a wide range of melt indexes.

Due to the required low melt index limits of two of three inner plies (b) and (d) according to Paleari and due to the large number of examples cited by Paleari that teach away from laminates according to the invention, it is clear that a person skilled in the art would derive no suggestion or motivation from Paleari or Hodgson to purposefully select inner plies according to Paleari and an outer ply with a melt index at the extreme end of a broad range of melt indexes as taught by Hodgson.

The Examiner asserts that layers a) and b) of Paleari would be inner layers according to the present invention and layer d) would read on the outer layer. From the teaching of Paleari, it is absolutely clear that d) is a further inner layer (next to layers b and c) with a melt index lower than 1 and is never a heat sealable layer. Only layer a) of Paleari is heat-sealable and doubtlessly corresponds to the outer ply (b) of the present invention.

In consequence, outer ply (b), according to the invention, is a heat-sealable layer which would have to be compared to (a) in Paleari's teaching (see abstract).

Therefore, no person reading Paleari, with or without Hodgson, Jr. could ever be led to Applicant's novel heat sealable layer, where the outer ply (b) has a lower MFR than the inner layer (i).

In the face of these differences, which have already been pointed out to the Examiner, the Examiner now, as he did in the rejection based on Dobreski above, uses his imagination to create his own prior art. According to the Examiner, Paleari's film, with Hodgson's heat seal layer substituted and when heat sealed, would then have the heat seal side (having a high MFR) adjacent to the substrate. This the Examiner sees as corresponding to Applicants' novel film. However, as in the Examiner's other "creative prior art", this does not change the fundamental character of the Paleari/Hodgson film. It still is what it always was, and putting two pieces of it together and heat sealing them does not create a new film in the heat-sealed area. The end result of the heat sealing will be two plies of the same or different film heat sealed to each other; but not a new laminate or a new film.

Furthermore, during the heat sealing proposed by the Examiner, the properties of the film in the heat sealed area, especially the properties of each ply of a multi-ply sealing layer, are changed because the various polymers of these plies are mixed during their quasi molten status during the heat-sealing step. This means that the MFR values of the various polymers are substantially changed because of this mixing. The proposed heat-sealed film would no longer be heat-sealable. Applicants' heat-sealable film clearly could never be arrived at under the Examiner's hypothetical.

The rejection of Claims 31, 2-10, 12, 13, 14, 17, 18, 19, 23, 26, 27 and 28 under 35 U.S.C. 103(a) as obvious over Paleari in view of Hodgson, Jr. should be withdrawn.

Claims 31, 2-11, 13, 15, 17-21, 23, 26-28 and 30 stand rejected under 35 U.S.C. 103(a) as obvious over Chum (US 5,089, 321).

Chum, however teaches that the MFR of the inner layer should be less than the MFR of the outer layer. In fact, the Examiner himself points this out, and acknowledges that the melt index of Chum's outer layer (a) is at least two and preferably three times the melt index of inner layer 9b). This is exactly the opposite of Applicants' film, wherein the outer layer has a lower MFR than the inner layer. Chum therefore teaches away from the present invention, and the rejection of claims 31, 2-11, 13, 15, 17-21, 23, 26-28 and 30 under 35 U.S.C. 103(a) as obvious over Chum (US 5,089, 321) should be withdrawn.

Claim 24 stands rejected under 35 U.S.C. 103(a) as obvious over Chum.

The Examiner asserts that Chum provides for a pigment and that calcium carbonate is known in the Art as a pigment. This does not however suggest the use of calcium carbonate in Applicants' film and, more important, does not in any way compensate for the deficiencies in the Chum reference that are pointed out above.

In this regard, the foregoing comments regarding the rejection of Claims 31 etc. over Chum apply equally well to this rejection.

Chum neither teaches nor suggests a heat sealable laminate wherein the outer ply has lower MFR than the inner ply.

The rejection of Claim 24 under 35 U.S.C. 103(a) as obvious over Chum should therefore now be withdrawn.

In view of the above remarks, it is believed that Claims 2-10, 12-24 and 26-31 are now in condition for allowance. Reconsideration of said claims by the Examiner is respectfully requested, and the allowance thereof is courteously solicited.

CONDITIONAL PETITION FOR EXTENSION OF TIME


If any extension of time for this response is required, applicants request that this be considered a petition therefor. Please charge the required petition fee to Deposit Account No. 14-1263.

ADDITIONAL FEE

Please charge any insufficiency of fees, or credit any excess, to Deposit Account No.

14-1263.


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**MARKED-UP COPY OF AMENDED PARAGRAPH,
SHOWING CHANGES RELATIVE TO PREVIOUS VERSION**

2. (twice amended). The [multi-plyed laminate] heat-sealable composite film of Claim 31 wherein the MFR of said outer ply (b) is 0.1 to 3 g/10min.

3. (twice Amended, Clean).: The [multi-plyed laminate] heat-sealable composite film of Claim 31 wherein the MFR of said outer ply (b) is 0.5 to 2 g/10 min.

4. (twice amended). The [multi-plyed laminate] heat-sealable composite film of Claim 31 wherein the MFR of said inner ply (i) is at least twice the MFR of said outer ply (b).

5. (twice amended). The [multi-plyed laminate] heat-sealable composite film of Claim 31 wherein the MFR of said inner ply (i) is at least thrice the MFR of said outer ply (b).

6. (twice amended). The [multi-plyed laminate] heat-sealable composite film of Claim 31 wherein the weight per area of said inner ply (i) is at least 60% of the weight per area of said multi-plyed laminate (I).

7. (twice amended). The [multi-plyed laminate] heat-sealable composite film of Claim 31 wherein the weight per area of said inner ply (i) is at least 70% of the weight per [one] area of said multi-plyed laminate (I).

8. (twice amended). The [multi-ply d laminate] heat-sealable composi~~t~~ film of

Claim 31 wherein said outer ply (b) has a thickness of 5 to 50 μm .

9. (twice amended). The [multi-ply laminate] heat-sealable composite film of Claim 31 wherein said outer ply (b) has a thickness of 10 to 30 μm .

10. (twice amended). The [multi-ply laminate] heat-sealable composite film of Claim 31 wherein said outer ply (b) has a thickness of 10 to 20 μm .

12. (twice amended). The [multi-ply laminate] heat-sealable composite film of Claim 31 wherein said inner ply (i) includes two plies.

13. (three times amended). The [multi-ply laminate] heat-sealable composite film of Claim 31 wherein said outer ply polymeric resin comprises at least one member selected from the group consisting of ethylene/vinyl acetate copolymer, ethylene/unsaturated ester copolymer, ethylene/unsaturated carboxylic acid copolymer, salt of ethylene/unsaturated carboxylic acid copolymer, low density polyethylene, high density polyethylene, and copolymer of ethylene and α -olefin having at least 3 carbon atoms.

14. (amended). The [multi-ply laminate] heat-sealable composite film of claim 13 wherein said unsaturated ester comprises at least one member selected from the group consisting of butyl acrylate and ethyl acrylate.

15. (amended). The [multi-ply laminate] heat-sealable composite film of claim 13 wherein α -olefin of said copolymer of ethylene comprises at least one member selected

from the group consisting of butane, hexane, octane and 4-methyl-1-pentene.

16. (amended). The [multi-ply laminate] heat-sealable composite film of Claim 15 wherein copolymer comprises the product of a reaction catalyzed by metallocene.

17. (twice amended). The [multi-ply laminate] heat-sealable composite film of Claim 31 wherein said inner ply polymeric resin comprises at least [on] one member selected from the group consisting of ethylene/vinyl acetate copolymer, ethylene/unsaturated ester copolymer, ethylene unsaturated carboxylic acid copolymer, salt of ethylene/unsaturated carboxylic acid copolymer, low density polyethylene, high density polyethylene, and copolymer of ethylene and α -olefin having at least 3 carbon atoms.

18. (three times amended). The [multi-ply laminate] heat-sealable composite film of Claim 31 wherein said outer ply polymeric resin comprises at least one member selected from the group consisting of: ethylene/vinyl acetate copolymer wherein content of vinyl acetate is at most 20% relative to the weight of said copolymer; ethylene/unsaturated carboxylic acid copolymer wherein content of carboxylic acid is at most 8% relative to the weight of said copolymer; salt of ethylene/unsaturated carboxylic acid copolymer having a content of carboxylic acid of at most 10% relative to the weight of said copolymer; low density polyethylene having a density of 0.91 to 0.935 g/cm³; and copolymer of ethylene and α -olefin having density of 0.90 to 0.94 g/cm³.

19. (three times amended). The [multi-ply laminate] heat-sealable composite film of Claim 31 wherein said inner ply polymeric resin comprises at least one member selected

from the group consisting of: ethylene/vinyl acetate copolymer wherein content of vinyl acetate is at most 20% relative to the weight of said copolymer; ethylene/unsaturated carboxylic acid copolymer wherein content of carboxylic acid is at most 8% relative to the weight of said copolymer; salt of ethylene/unsaturated carboxylic acid copolymer having a content of carboxylic acid of at most 10% relative to the weight of said copolymer; low density polyethylene having a density of 0.91 to 0.935 g/cm³; and copolymer of ethylene and α -olefin having density of 0.90 to 0.94 g/cm³.

20. (twice amended). The [multi-ply laminate] heat-sealable composite film of Claim 31 wherein said outer ply (b) comprises a copolymer of ethylene and α -olefin.

21. (twice amended). The [multi-ply laminate] heat-sealable composite film of Claim 20 wherein said copolymer further comprises at least one member selected from the group consisting of low density polyethylene and copolymer of ethylene and vinyl acetate, said member being present in an amount of up to 50% relative to the total weight of said ply (b).

22. (amended). The [multi-ply laminate] heat-sealable composite film of Claim 21 wherein said copolymer of ethylene and α -olefin is characterized in that it is a product of a reaction catalyzed by metallocene, and in that it has a crystalline melting point of at most 110°C, and in that its ratio of weight average molecular weight to number average molecular weight is at most 3.

23. (twice amended). The [multi-ply laminate] heat-sealable composite film of

Claim 31 wherein at least one of said inner ply (i) and said outer ply (b) include at least one of anti-blocking additives and dyes.

24. (twice amended). The [multi-ply laminate] heat-sealable composite film of Claim 31 wherein said outer ply (b) comprises 0.1 to 2% relative to the weight of said outer ply (b) of solid inorganic particles selected from the group consisting of silicon oxide, calcium carbonate, magnesium silicate, aluminum silicate, calcium phosphate and talc.

Please replace Claim 26 with the following:

26. (four-times amended). The [multi-ply laminate] heat-sealable composite film of claim 31, wherein said substrate is selected from the group consisting of metal, cardboard, paper, paperboard, textile, non-woven fabric, plastic and composites thereof, said plastic being other than said outer ply polymer resin and said inner ply polymer resin.

30. (twice amended). A composite film comprising the multi-ply [laminate] heat-sealable layer of Claim 31 [as a heat sealable layer] with said outer ply (b) being one outer [layer] ply of said [laminate] multi-ply heat-sealable layer.

31. (twice amended). A [multi-ply laminate] heat-sealable composite film comprising a multi-ply heat-sealable layer (I) [laminated to] and a substrate, said [multil] multi-ply heat-sealable layer (I) consisting of:

an outer ply (b) having a melt flow rate (MFR), as determined in accordance with DIN ISO 1133 at 190°C and 2.16 kg, of at least 0.1 g/10 min., and comprising an outer ply

polymeric resin; and

at least one inner ply (i), each inner ply (i) having an MFR, as determined in accordance with DIN ISO 1133 at 190°C and 2.16 kg, that is greater than the MFR of said outer ply (b), and comprising an inner ply polymeric resin, said at least one inner ply (i) being between said outer ply (b) and said substrate wherein the weight per unit area of said inner ply (i) is at least 40% of the weight per unit area of said multi-ply laminate (I).